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S/N 10/576430 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	STOLTENBERG et al.	Examiner:	ADDIE, R.
Serial No.:	10/576430	Group Art Unit:	3671
Filed:	April 20, 2006	Docket No.:	20037.1004USWO
Title:	DRAINAGE CHANNEL		

CERTIFICATE UNDER 37 CFR 1.6. I hereby certify that these papers are being transmitted via facsimile to the U.S. Patent and Trademark Office on 30 OCTOBER 2008.

By: _____
Name: Heidi McCarty

COMMUNICATION REGARDING PRIOR ART TO BE PLACED IN FILE WRAPPER

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Applicant respectfully requests that the enclosed references, namely DE 198 26 991 (and its corresponding English abstract) and GB 1 344 236, be placed in the file wrapper of the above-referenced application. The references were cited in the parallel Russian patent application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, Curtis B. Hamre (Reg. No. 29,165), at (612) 455.3802.

Respectfully submitted,

52835
PATENT TRADEMARK OFFICE

HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
P.O. Box 2902-0902
Minneapolis, MN 55402-0903
(612) 455-3800

Dated: 30 October 2008

By: _____
Curtis B. Hamre
Reg. No. 29,165

CBH:hjm

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Two part polymer concrete drain

Publication number: DE19826991 (A1)
Publication date: 1999-12-23
Inventor(s): HOFMANN FRIEDRICH [DE]
Applicant(s): HOFMANN FRIEDRICH [DE]
Classification:
- international: *E03F3/06; F16L9/08; F16L55/162;* E03F3/00; F16L9/00; F16L55/162; (IPC1-7): E03F3/04
- European: E03F3/06; F16L9/08; F16L55/162
Application number: DE19981026991 19980618
Priority number(s): DE19981026991 19980618

Cited documents:
DE2716660 (C3)
DE8432735U (U1)
DD123490 (A)

Abstract of DE 19826991 (A1)
A concrete drain, e.g. for sewer laying, is made of polymer concrete in two sections. A lower section is laid onto a concrete base and concrete is filled between the duct and the sides of the trench partway up the sides of the section. The top section is then fitted and concrete poured over the top to seal the duct. The inside wall of the drain is clad with plates with interlocking edges.

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(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENT- UND MARKENAMT

(12) **Offenlegungsschrift**

(10) **DE 198 26 991 A 1**

(51) Int. Cl.[6]: E 03 F 3/04

(21) Aktenzeichen: 198 26 991.9
(22) Anmeldetag: 18. 6. 98
(43) Offenlegungstag: 23. 12. 99

(71) Anmelder:
Hofmann, Friedrich, 90455 Nürnberg, DE

(72) Erfinder:
gleich Anmelder

(56) Für die Beurteilung der Patentfähigkeit in Betracht zu ziehende Druckschriften:

DE 27 16 660 C3
DE 84 32 735 U1
DD 1 23 490
HLOZEK,Herbert, SMETACZEK,Alois: Rationeller Kanalbau für Profilkanäle mit der Pneumoschalung. In: Korrespondenz Abwasser, 1998, 45, Nr.6, S.1107-1109;
STEIN,D., MÖLLERS,K.: Werkseitige Korrosionsschutzmaßnahmen für Abwasserrohre aus Beton oder
Stahlbeton. In: Korrespondenz Abwasser, 1987, H.10, S.1016-1026;

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Zweiteil-Eiprofil aus Polymerbeton mit Auskleidung aus Spaltplatten für alle Dimensionen des genormten (DIN) Eiprofilkanals

DE 198 26 991 A 1

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BUNDESDRUCKEREI 10.99 902 051/293/1

PAGE 5/13 * RCVD AT 10/30/2008 3:01:49 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-5/37 * DNIS:2732885 * CSID:612-455-3801 * DURATION (mm-ss):04-50

DE 198 26 991 A 1

Beschreibung

Stand der Technik

Rohre aus Polymerbeton und Auskleidungen aus polymergebundenen Steinzeug – Spaltplatten gibt es bereits auf den Markt.

Nachteile Stand der Technik

Rohrmaterialien aus Polymerbeton erfüllen nicht immer die gestellten Anforderungen der dauerhaften Abriebbeständigkeit als auch wirtschaftlicherseits.

Auskleidungen aus Steinzeugplatten haben Schwachstellen im Fugenbereich.

Aufgabe der Erfindung

Anwendung-Auskleidung (Sanierung) von bestehenden Kanälen aller Dimensionen und Formen:
Durch die verzahnten, polymergebundenen Steinzeugspaltplatten-Zweiteilelemente (Skizze A) wird eine Auskleidung für Kanäle erstellt, welche durch die Stegausbildung der Steinzeugplatten (Detail 1) sich verzahnt und somit eine Schwachstelle "durchgehende Fuge" nicht mehr vorhanden ist.

Anwendung Kanalneubau

Durch versetzen vom werkmäßig vorgefertigten Zweiteil-Elementen mit obenbeschriebener Innenauskleidung – erst unteres Teilelement (B) auf Betonsohle (2), Anfüllen des Elementes bis zur 2/3 Höhe mit Beton (3), Aufsetzen des oberen Teilelementes (C) und Überfüllen desselben mit Beton (4), entsteht ein Rechteck-Teilortbetonkanal mit hochwertiger Innenauskleidung, welcher unter entsprechenden Bedingungen als eine wirtschaftlichere Lösung im Kanalbau angesehen werden kann, als herkönmliche Bauweisen.

Patentansprüche

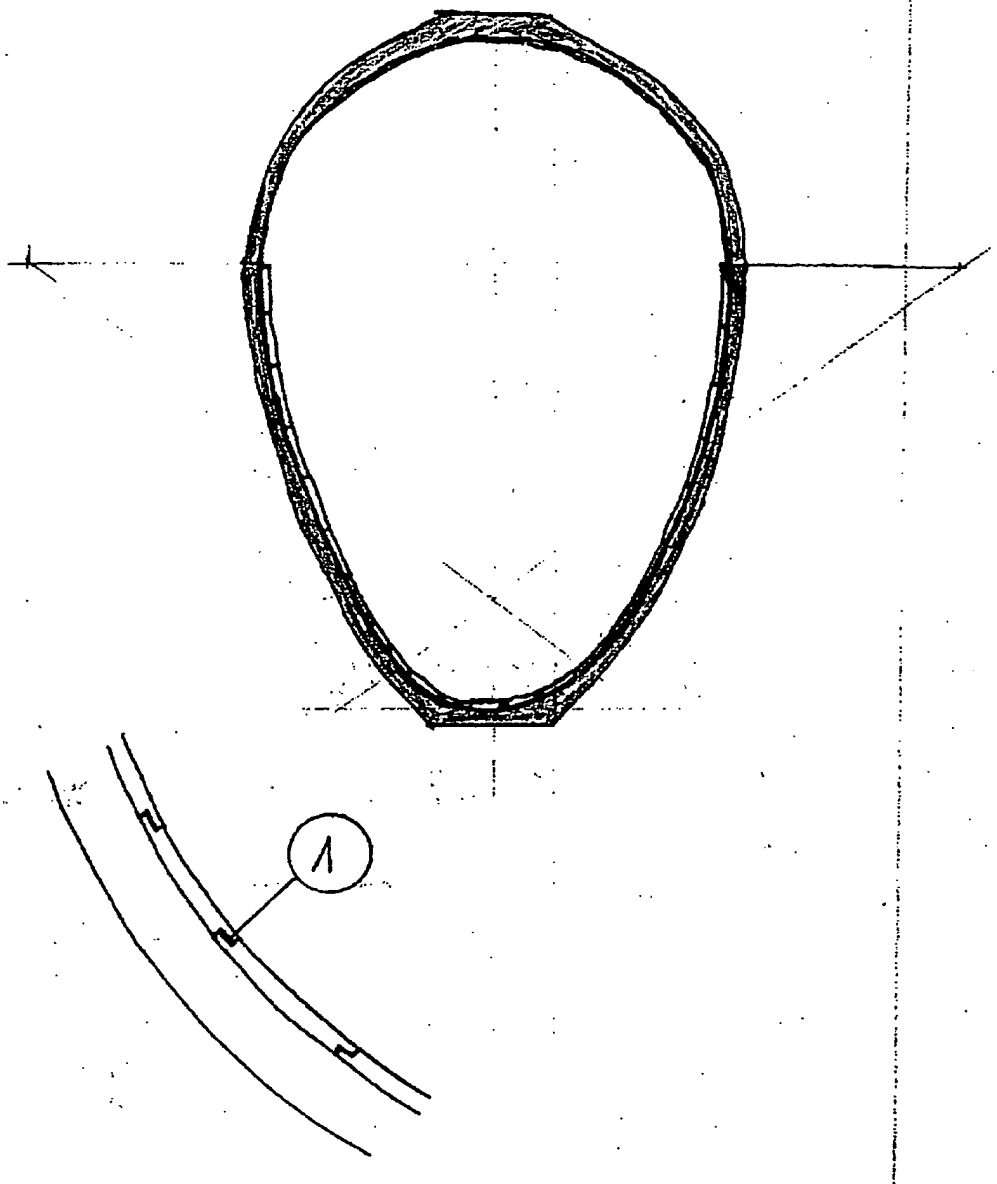
Zweiteil-Eiprofil aus Polymerbeton mit Auskleidung aus Spaltplatten für alle Dimensionen des genormten (DIN) Eiprofilkanals.

Hierzu 2 Seite(n) Zeichnungen

ZEICHNUNGEN SEITE 1

Nummer: DE 198 28 991 A1
Int. Cl.[6]: E 03 F 3/04
Offenlegungstag: 23. Dezember 1999

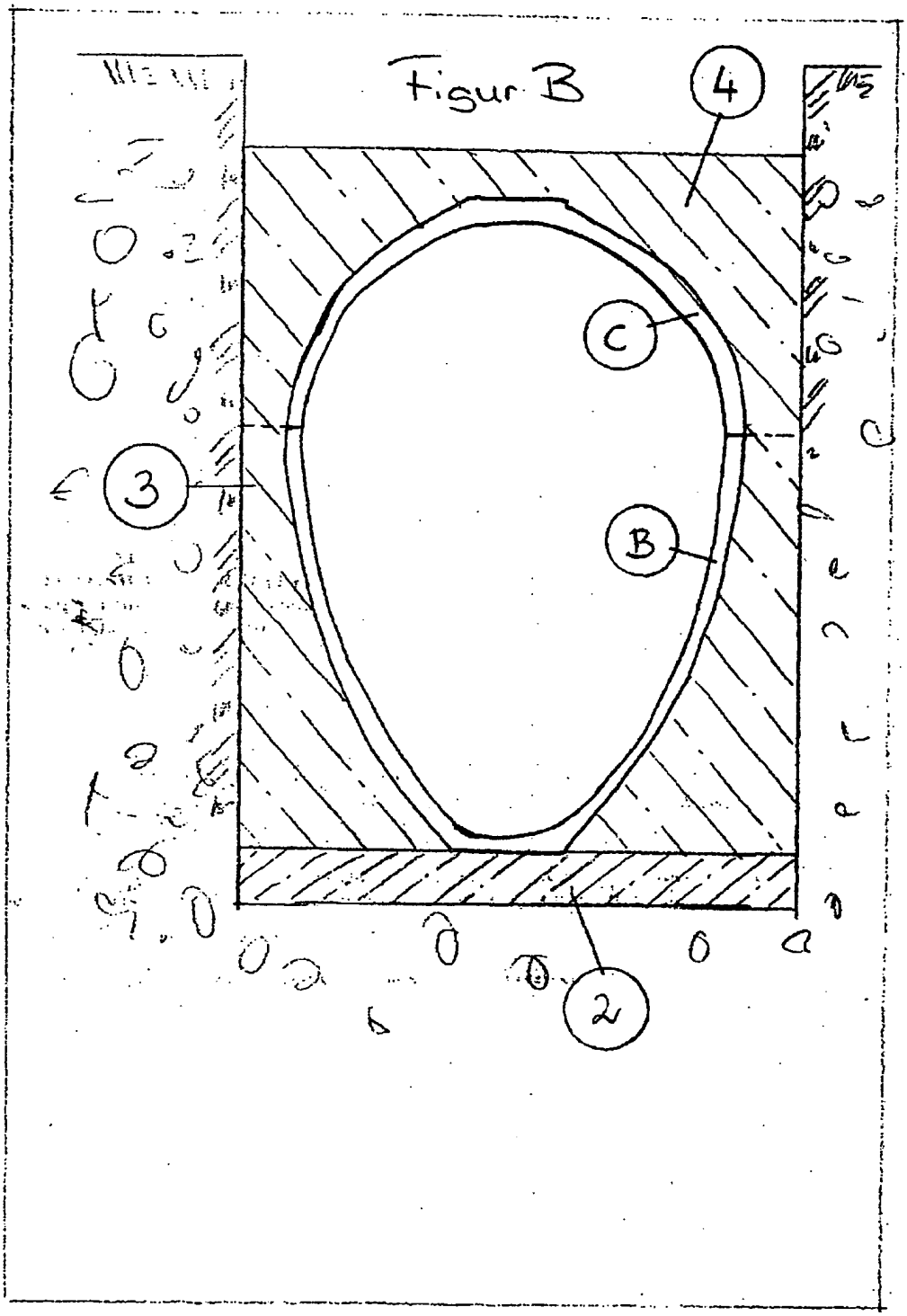
FIGUR A



902 051/293

ZEICHNUNGEN SEITE 2

Nummer: DE 198 28 991 A1
Int. Cl.[6]: E 03 F 3/04
Offenlegungstag: 23. Dezember 1999



902 051/293

PATENT SPECIFICATION

(11) **1 344 236**

1 344 236

(21) Application No. 13351/72 (22) Filed 22 March 1972
(23) Complete Specification filed 5 June 1972
(44) Complete Specification published 16 Jan. 1974
(51) International Classification E01C 11/22; E03F 3/04; E04H 3/16
(52) Index at acceptance
E1G 65 67
E1C 3

(72) Inventor RONALD LESLIE HAMER

(19)

(54) DRAINAGE BLOCKS

PATENTS ACT 1949

SPECIFICATION NO 1344236

In pursuance of Section 8 of the Patents Act, 1949, the Specification has been amended in the following manner:-

Page 1, line 30, *after* block *delete* full stop *insert* wherein, the drainage conduit, in transverse cross-section, is basically of circular shape but has a protuberance shaped as a trapezium, the non-parallel sides of that trapezium being located to join with the walls of the drainage passageways.

Page 2, *delete* lines 39 to 43, *insert* drainage of a roadway.

Page 2, *delete* lines 62 to 74, *insert* wherein the drainage

Page 2, *delete* lines 81 to 84 *insert* 2. A drainage block according to claim 1 wherein the drainage passageways are shaped, in cross-section taken on all planes parrallel to the depth dimensions of the passageways, as trapeziums, the minor parallel sides of the trapesezlums being at the surface of the block and the major parallel sides being at the drainage conduit.

Page 2, lines 85 and 86 *delete* any one of claims 1 to 4 *insert* claim 1 or 2

Page 2, *for* Claims 6 to 12 *read* 3 to 9 inclusive.

Bas 28720/2

THE PATENT OFFICE
12 May 1976

... drawings. The ... which:—

Fig. 1 is a perspective view;

Fig. 2 is a sectional view on the line II—II of Fig. 1; and

Fig. 3 is a sectional view on the line III—III of Fig. 2.

The block 10, which is of precast concrete, has a lengthwise drainage conduit 11. The block 10 is shown having eight drainage passageways 12 from one flat longitudinal face 13 of the block into the conduit 11. The passageways are rectangular in cross-section taken on a plane at right angles to the depth passageways may also be arcuate in plan view. They could be rhomboidal in shape or oval, for example. The upper surface may have slightly inclined areas to encourage drainage into the passageways 12. The edges of the passageways 12 transverse to the length of the blocks, may be at slightly differing levels. It would be possible to stagger alternate passageways 12 so that they are offset to both sides of the central longitudinal vertical plane of the block. The passageways 12 could also have a degree of inclination to the vertical. The upper surface 13 need not be planar.

SPECIFICATION AMENDED - SEE ATTACHED SLIP

PATENT SPECIFICATION

(11) 1 344 236

1 344 236

(21) Application No. 13351/72 (22) Filed 22 March 1972
(23) Complete Specification filed 5 June 1972
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(51) International Classification E01C 11/22; E03F 3/04; E04H 3/16
(52) Index at acceptance
E1G 65 67
E1C 3

(72) Inventor RONALD LESLIE HAMER

(19)

(54) DRAINAGE BLOCKS

(71) We, EVERCRETE LIMITED, a British Company whose registered office is 28 Queen Street, Albert Square, Manchester M2 5OT, Lancashire, do hereby declare the invention, for which we pray that a Patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to concrete drainage blocks suitable for use with vehicle-carrying surfaces.

It is an object of the invention to provide a concrete drainage block especially, but not exclusively, for road use having improved strength to resist compressive forces acting in a direction transverse to the length of the block.

The drainage block, suitable for use with vehicle-carrying surfaces, of the present invention comprises an elongate concrete block with a lengthwise drainage conduit, and having at intervals along the length of the block, drainage passageways from one longitudinal face of the block into the drainage conduit, the passageways having, in cross-section taken on a plane at right angles to the depth dimension of the passageways, a major dimension transverse to the length of the block.

A drainage block according to the invention will now be described with reference to the accompanying drawing in which:—

Fig. 1 is a perspective view;

Fig. 2 is a sectional view on the line II—II of Fig. 1; and

Fig. 3 is a sectional view on the line III—III of Fig. 2.

The block 10, which is of precast concrete, has a lengthwise drainage conduit 11. The block 10 is shown having eight drainage passageways 12 from one flat longitudinal face 13 of the block into the conduit 11. The passageways are rectangular in cross-section taken on a plane at right angles to the depth dimension 15 of the passageways, the major dimension of the rectangle, such as dimension of side 16 at the mouth 17 of each passageway, being transverse to the length of the block 10. The passageways 12 have, in cross-sections taken on all planes parallel to the dimensions 15, the shape of a trapezium. This is seen for example in the sectional view of Figs. 2 and 3. The minor parallel sides 18 and 19 of each trapezium being at the face 13 and the major parallel sides 20 and 21 being at the drainage conduit 11. Each conduit 11 is basically of circular shape but has a protuberance 22 in the shape of a trapezium, the non-parallel sides 23, 24 of this trapezium being located to join with the walls of passageways 12.

It will be appreciated that the block described above will have a high strength to resist compressive forces acting in all directions transverse to the length of the block. Such forces may occur when handling or stacking the blocks or in use especially when used with side drainage. Typically the block described above is designed to take a wheel load of 11 tons when used, for example, for road surface drainage.

In modified arrangements it is possible to arrange the passageways 12 to have a slight deviation from the precise transverse orientation shown in the drawings. The passageways may also be arcuate in plan view. They could be rhomboidal in shape or oval, for example. The upper surface may have slightly inclined areas to encourage drainage into the passageways 12. The edges of the passageways 12 transverse to the length of the blocks, may be at slightly differing levels. It would be possible to stagger alternate passageways 12 so that they are offset to both sides of the central longitudinal vertical plane of the block. The passageways 12 could also have a degree of inclination to the vertical. The upper surface 13 need not be planar.

The block 10 shown in the drawing is devoid of end recesses or spigots for associating the block with similar blocks to form a drainage duct. This is adequate for blocks to be set in concrete. However, it also is possible, within the scope of the present invention, for the block 10 to have such recesses and spigots. It can also have end face projections and recesses to key the blocks to each other in line. Sealing rings can also be provided at the ends of the drainage conduits 11.

The face 13 of the block from which the drainage passageways extend may be provided with a shallow longitudinal groove intersecting the mouths 17 of the drainage passageways. Preferably the edges of the faces of the blocks from which the drainage passageways extend are rounded to give a smooth and finished appearance to those parts of the block which are visible in use.

Also preferably, and as shown in the drawings, the passageways 12 are equally pitched and the two passageways nearest the end of the block are located at one half a pitch from the end faces of the block so that, in a line of blocks arranged end-to-end, all passageways are equally spaced.

The invention also resides in drainage systems using blocks as above described. Whilst it is usual to arrange for drainage blocks to be orientated in use so that the passageways 12 are approximately vertical and the conduit 11 approximately horizontal, it is also possible to use blocks according to the invention with vehicle carrying surfaces so that the blocks have other orientations such as to provide side drainage of a roadway. The conduit 11 is conveniently made basically circular in section but it is possible, depending on forseeable stress patterns, to arrange for ovalised or other shaped conduits 11

Drainage blocks according to the invention may be used not only for roadways but with other vehicle-carrying surfaces such as airport runways, factory areas docks and terminals.

WHAT WE CLAIM IS:—

1. A drainage block, suitable for use with vehicle carrying surfaces, comprising an elongate concrete block with a lengthwise drainage conduit and having, at intervals along the length of the block, drainage passageways from one longitudinal face of the block into the drainage conduit, the passageways having, in cross-section taken on a plane at right angles to the depth dimension of the passageways, a major dimension transverse to the length of the block.

2. A drainage block as claimed in claim 1 wherein the passageways are rectangular in said cross-section.

3. A drainage block as claimed in claim 2 wherein the drainage passageways are shaped in cross-sections taken on all planes parallel to the depth dimensions of the passageways as trapeziums the minor parallel sides of the trapeziums being at the surface of the block and the major parallel sides being at the drainage conduit.

4. A drainage block according to any preceding claim wherein the drainage conduit, in transverse cross-section, is basically of circular shape but has a protuberance shaped as a trapezium the non-parallel sides of that trapezium being located to join with the walls of the drainage passageways.

5. A drainage block according to any preceding claim wherein that face of the block from which the drainage passageways extend to the drainage conduit is flat.

6. A drainage block according to any one of claims 1 to 4, wherein that face of the block from which the drainage passageways extend to the drainage conduit has a shallow longitudinal groove intersecting the mouths of the drainage passageways.

7. A drainage block according to any preceding claim wherein the end faces of the blocks are devoid of recesses.

8. A drainage block according to any preceding claim wherein the longitudinal edges of the face of the block from which the drainage passageways extend are rounded.

9. A drainage block according to any preceding claim wherein the passageways are equally pitched and the two passageways nearest the ends of the block are located at one half of a pitch from the end faces of the block so that, in a line of blocks arranged end-to-end, all passage ways are equally spaced

10. A drainage block substantially as hereinbefore described with reference to the accompanying drawing.

11. A drainage system including blocks according to any preceding claim arranged end-to-end with the faces from which the drainage passageways extend being uppermost for top drainage.

12. A roadway drainage system including blocks according to any preceding claim arranged end-to-end with the faces from which the drainage passageways extend arranged as side faces of the system for side drainage of the roadway.

Agents for the Applicants,
SYDNEY E. M'CAW & CO.,
Chartered Patent Agents.
Saxone House,
52—56 Market Street,
Manchester M1 1PP.

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1344236 COMPLETE SPECIFICATION
1 SHEET *This drawing is a reproduction of the Original on a reduced scale*

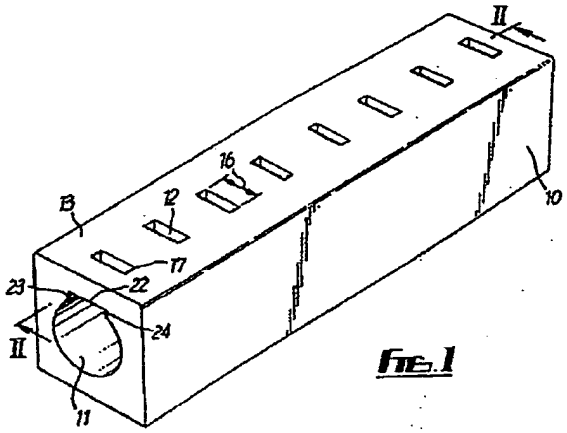

FIG. 1

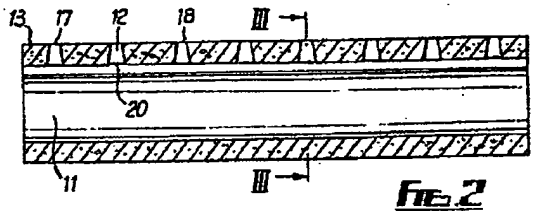

FIG. 2

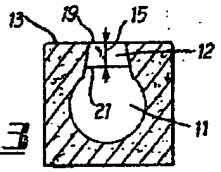

FIG. 3